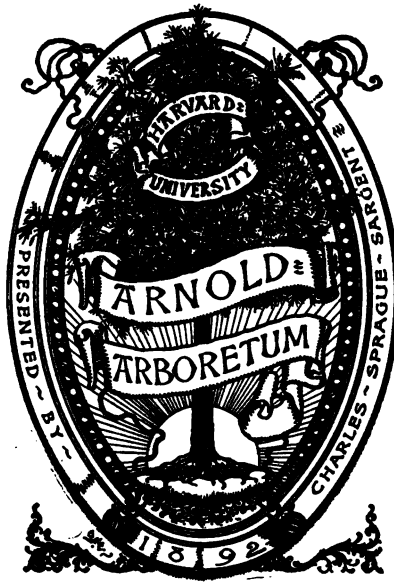
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1892

A

TREATISE

ON

THE MANAGEMENT

OF

HEDGES,

AND

HEDGE-ROW TIMBER.

By FRANCIS BLAIKIE.

A NEW EDITION.

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ADVERTISEMENT.

THE following Remarks, on an important branch of Rural Economy, were first published in *Evans and Ruffy's Farmers' Journal*; and, having attracted a considerable share of public attention, are now reprinted, with some trifling alterations in a style uniform with the Author's other Tracts on *Rural Affairs*.

A

TREATISE ON HEDGES,

&c. &c. &c.

CHAPTER I.

On raising Quickset Fences.

AS fences in general, but more particularly whitethorn hedges, form a prominent feature in rural management, I am led to believe that a treatise on the subject will prove acceptable, perhaps instructive, to some of your young readers. It is with this view I now address myself to you, while at the same time I cannot avoid expressing regret that the subject has not been taken up by some other pen better qualified than mine to do it the justice it merits.

My remarks will naturally apply more directly to the district in which I reside, (and where your Journal is pretty generally read), yet I trust they

will not be found inapplicable to some other districts within the wide circuit of your paper.

It is my intention to take rather an extended view of the subject, by commencing with the first rudiments in the preparation of the soil for planting, continuing through the intermediate stages of training and culture, and concluding with the management of hedges arrived at maturity. The rearing of hedge-row timber will also be treated upon, so that the whole will embrace rather a wide field; but it is extremely difficult for one farmer to communicate his ideas with perspicuity to another (particularly on the operative parts of practical questions), otherwise than by entering extensively into detail.

There may be some difference in opinion as to the best method of planting and rearing quickset (white-thorn) hedges, but I think there can be none in respect to the propriety of thoroughly cleaning and preparing the ground in the first instance; and all experienced men will agree, that it is not advisable to plant a new hedge upon the same spot where an old one had been recently grubbed up, unless under unavoidable circumstances, such as boundary fences, &c. &c. in that case the ground should be well loosened, fallowed for a year or two, and have fresh earth or compost added: the better the ground is prepared, the sooner will the hedge arrive at maturity, and the longer will be its duration.

The practice in this county, (Norfolk), even on our lightest soils, is to put the quicksets (here called layers) horizontally into the side of the bank, raised from a four or five feet wide ditch, of a proportionate depth; and I have never seen white-thorn hedges raised quicker, or better, than in this county, and all upon that principle. I must, however, acknowledge, that although the Norfolk farmers very generally excel in raising hedges, they but too frequently err in the future management: youth is succeeded by infirmities; there is no prime of life. But of this hereafter, in its proper place.

Before I proceed to a description of the operative processes, I will pay a tribute of praise to the Norfolk farm-labourers, which is justly their due: —They are, without exception, the most intelligent class of men, in their station of life, I have met with in any district of the island with which I am acquainted. They are remarkably active and expert in executing the duties of their several branches of husbandry: and, amongst others, they particularly excel as spadesmen; their flag (turf) banking is quite beautiful. There is, however, a gross error which they frequently commit in the operation of forming ditch banks and setting white-thorn plants; but I must do them the justice of saying, the fault is more generally with the master than with the man, as the following statement will shew.

The greater part of the farm work in Norfolk is performed by job or contract, at prices regulated by custom, and it but seldom happens that any extra allowance is made for unforeseen impediments; as for instance, in banking and hedge planting the rule is as follows:—the master determines on the line, or direction of the fence; he fixes on the width and depth of the ditch, and on the height of the line on which the quicksets are to be laid into the bank; the price per rod is then settled between the parties, and the labourer commences his work according to the principle of the rule laid down. But as it frequently happens that the surface soil, or cultivated earth (into which the quicksets ought to be laid when heaped upon the bank), is of irregular depths, some places very shallow, the quicksets are in consequence not unfrequently laid into the arid subsoil thrown from the ditch upon the bank: it follows, that the young hedge grows irregular, and even in some instances does not grow at all. Hence arises the necessity of equalizing the surface soil along the line where the quicksets are to be laid in the bank, and the labourer should be paid *extra* for his time and trouble in casting or wheeling a part of the surface soil from where it is superabundant to where it is deficient.

There is another error which frequently occurs where quicksets are planted on the sides of banks; that is, in not varying the height of the line of quick in the bank, according to the nature of the

soil. Experience teaches, that when quicksets are laid into the bank upon the level of the original surface, and the earth taken from a four or five feet ditch, heaped on the bank above the roots of the quick, the pressure from the great body of the earth upon the tender fibrous roots of the thorn plants, and the exclusion of air from those roots whose natural habit is to grow near the surface of the ground, materially injures the plants and stagnates their growth. Hence farmers, occasionally, fall into the opposite extreme, by causing the plants to be set too high in the bank, when their roots are not only exposed to too great drought, but they are removed from the surface soil from whence they should derive the greater part of their nourishment. I allow, that it is proper to plant high in the bank where there is a great depth of surface soil, incumbent upon a retentive clay, or tilly subsoil; but it does not follow that the same practice should be adopted upon a burning sand, a sharp gravel, or a dry chalk: such, however, is sometimes the case; and the fault cannot be attributed to the labourer; it rests with the farmer, and proceeds from his neglect or inexperience.

The aspect for planting quicksets must be regulated by local circumstances. One general rule may, however, be mentioned, viz. when land is light and has a southern exposure, the ditch-bank and quicksets should be made to face the north; and *vice versa*, where land is strong and has a

northern exposure, the ditch-bank and quickset should be made to face the south; the only objection in the latter case is, the liability of the thorns being broken down by snow drifts.

The roots of quicksets are frequently laid quite horizontal into the bank; this is a bad practice: the roots should be laid upon a gentle slope, or inclined plane, pointing downwards; the tops of the plants will then act as conductors for wet to nourish the roots; whereas, if laid horizontal, the wet drops off at the sharp angle formed by the top growing perpendicular from the face of the bank; and another material advantage in planting on the inclined plane is, the roots of the plants are laid in a direction to be more immediately benefitted by the surface or cultivated soil.

The age of the quickset plants (whether of one or two years growth) is not so material, as that the plants should be of free growth.

Much injury is frequently sustained from allowing plants to lay out of the ground, exposed to the frost and other vicissitudes of weather; the sooner they are planted after being drawn from the nursery the better; and when not convenient to plant immediately, their roots should be well protected by earth thrown upon them. This is a simple hint which farmers would do well in attending to.

Thorn plants should not be reset deeper into the ground than they had previously stood in the seed-bed or nursery; this is denoted by the commence-

ment of the green bark. The plants should be set, and the bank finished, before the tops are cut off; the operation will then be performed with regularity; whereas, if cut before planting, the workman will assuredly take a handful of plants up at a time, aud his cut will then be made without discrimination: some cut into the yellow bark, while others will have three or four inches of green left. The proper guage is one inch of green bark, which will contain three or four buds or eyes, and from those the plant will throw up strong shoots; whereas, if cut into the yellow bark, the shoot (if any) will be weak, but it is more likely not to shoot at all.

All young hedges should be kept perfectly free from weeds; and, in the operation of cleaning, the workman should be careful that his hoe does not injure the bark of the plants. He should not be allowed to cut any side shoots from the plants, under a pretence of giving him readier access to cleaning the weeds from the roots.

The customary process of setting thorn plants into old gateways, or other gaps in hedges, with intention of filling them up, is erroneous. It is usual to set young plants from the seed-bed into such places, to cut their heads off, and to treat them in other respects as in new planted hedge rows, with the exception of such places being frequently full of couch grass roots and other rubbish, which is seldom cleaned out. Crab plants are

found to succeed best in such situations, but whether crab or thorn, the plants should be three or four years old, and they should have been regularly transplanted in rows as nursery plants; they will then come up with good roots. The earth in the gaps should be previously well loosened, the rubbish clean picked out, and when the earth is moist in autumn, or early in spring, the plants should be set in the gaps, *upright* and *with their heads on*, nor should they, on any account, be cut down, until the whole hedge is cut. Plants, so treated, will seldom fail of succeeding, provided that they are kept clean, and well guarded against the depredations of sportsmen, hedge pullers, and farm stock.

CHAPTER II.

On the Selection, Planting, and Management of Hedge-row Timber Trees.

IT is rather surprising, that amongst the numerous recent improvements in rural management, the culture of hedge-row timber trees should have been so little attended to: this is the more to be wondered at, when one reflects, that the growth and prosperity of such timber is of great *national*

as well as private importance; indeed, it appears, that this branch has been retrograding in the inverse ratio, as others have been advancing. As a proof of this assertion, I have only to instance the many fine, tall stemmed old oak trees, still to be found in hedge-rows in various parts of the kingdom, while the oaks planted of late years in such situations, do not grow, either in shape or stature as if ever likely to be worthy of being ranked as timber trees; they are, in fact, nothing more than miserable stunted bushes, alike injurious to the farmer, and disgraceful to the estate on which they *exist*, for they cannot be said to grow, at least, not as timber trees ought to do.—There are no doubt, many exceptions, but, generally speaking, (to borrow an expression from a voluminous and highly celebrated writer), *there must be some radical defect* in the system and management of hedge-row trees. It is with a view to discover that defect, and to point out the remedy, that the present inquiry is instituted. My remarks will more particularly apply to *planted* hedge-row trees; and elm trees, springing up spontaneously *in thick hedge-rows*, will be excepted.

I am of opinion, that the culture of hedge-row trees in this district (as well as in many others), is conducted upon erroneous principles; the selection is usually regulated by caprice: seldom by judgment, matured from experience. The

usual method of planting is contrary to reason and common sense; and as to training, it is seldom or ever thought of.

These are, I allow, bold assertions; nay, serious charges brought forward against the practice of a district, justly celebrated for its superior agriculture, and other branches of rural management; and it does appear a serious task for me to substantiate those charges, and to point out remedies for correcting the errors and defects I have alluded to. I, however, enter upon it without trembling, or fear of giving offence to my neighbours; for I know them to have too much good sense to believe themselves perfect in all things, or to feel offended at any jocose expression, when not intended to insult. I will take the charges in rotation.

I. *Selection.*

It is not necessary for me to particularize all the sorts or varieties of forest trees, usually planted in hedge-rows, or to mention the various sizes or ages of the plants at the time they are commonly set. It is sufficient, in exemplification, to say, beech, ash, and firs, are not only ruinous to fences, but are also otherwise injurious to farmers; while oaks, narrow-leaved elm, and black Italian poplars do, comparatively, little injury; and as to the age of plants, it surely must be obvious, that a thrifty transplanted nursery tree of three years' growth, is more likely to succeed, when properly

planted in a hedge-row, than a puny yearling, drawn out of a seed bed, with its root like a piece of whipcord; or a tender sapling of six or seven years' growth, drawn out of a thick wood, whence it had not been previously transplanted. Those who have practised the last mentioned methods will understand me, and it is unneeessary to say more on that head.

II. *The Method of Planting.*

THE usual practice is, to lay the roots of the forest tree plants horizontally into the bank along with the white-thorns, and to cut their heads or tops off close to the ground, in the same manner as the thorns: a moment's reflection will show the absurdity of this practice. A surface-rooted plant, like the white-thorn, will thrive if laid into the bank horizontally, or nearly so; but a deep rooted plant, such as the oak, is not likely to thrive if treated in that manner. The roots of oaks strike deep into the ground, consequently the plants should be set perpendicular, and their heads, or tops, *should on no account* be cut off at the time of planting. But suppose that an oak plant, when laid into the bank horizontally along with the quicksets, does grow, and even prospers for a time, which it may do, when the extremities of the roots are bent downwards by the pressure of the earth in the bank above, and the plant, in consequence, finds nourishment and support from

the earth below; the top of the plant will then grow up among the row of thorns, and be protected by them until the hedge is cut, (which, in process of time, it must be): the oak plant will then be left exposed; and as the stem will have bent upwards, at a sharp angle from the face of the bank, the top of the tree (when agitated by the wind) will act as a powerful leverage, and have the effect of twisting and breaking the crooked roots of the plant in the bank: the result of the reaction may readily be anticipated, and need not be expressed.

These remarks are, in some degree, applicable to all forest trees planted in hedge-rows, but more particularly to deep-rooted ones. The method which I recommend for planting forest trees *generally* in hedge-rows, but more particularly oaks, is as follows: let the quicksets be laid in, as I have advised in my former letter, and the bank finished in the usual way; then select good transplanted trees of two or three years' growth, *fresh drawn from the nursery.* The broken roots and tips of the long fibres may be cut off; then push the spade down perpendicular into the bank between the roots of the quicksets; press the spade from side to side, so as to make a cleft opening, into which put the root of the plant as deep as it had before stood in the nursery; tread the earth firm to the root, and face the bank up, as before; leave the tops of forest-tree plants uncut at the time of

planting, unless when they are bushy headed, and without leaders or top shoots; in that case, a few of the larger side shoots may be *cut in*, that is, the extremities of the branches shortened. It is a most pernicious practice to cut the tops of young forest trees at the time of planting, and should only be adopted in particular cases, such as before mentioned.

The time most proper for planting hedge-row trees and quicksets, is autumn, or *early* in spring, and the work should never be delayed till *late* in spring, if it can be avoided. But when (from necessity) trees are planted late in spring, and the ground dry at the time, the roots of the plants should not only be kept moist before planting, but they should also be dipped into some earthy sludge at the time they are planted.

III. *Training.*

I HAVE before said, that training of hedge-row trees is seldom or ever thought of; and I will now add, when *pruning* is practised, it is generally performed in a very injudicious manner.

Young hedge-row trees seldom require much attention in training until the hedge is cut the first time; the trees should then be examined; if they appear crooked, stunted, and unthrifty, they should be cut off close to the face of the bank, in the same manner as the thorn plants are. The oak stubs may be expected to throw up several strong

shoots from each plant in the following season; and in a year or two afterwards, the best young shoot on such stub should be selected to remain, and all the others be slipped, or cut off close to the stub; the reserved shoots, or (as they may be called) regenerated plants, may then be expected to become timber trees; whereas, had the original stems been allowed to remain, they never would have been more than decrepid stunted bushes.

When an unthrifty young tree is to be cut off, as here recommended, particular attention should be paid to *the method of cutting*. The stroke from the workman's bill-hook or hatchet should always be *upwards*, or *from the stub*, and never *downwards*, or *to the stub*; whenever the latter practice is followed, the stub is left shattered, the wet penetrates through the clefts into the stool, or crown of the roots, canker is produced, and the tree rots. No good timber can be expected to grow from diseased roots.

The pruning of forest trees has been considered a matter of great national importance, on which much has been said and written; and as I am of opinion that the system of pruning recommended from various quarters has been generally misunderstood, and the operative part ill conducted, I will here take a rather extended view of the subject, from which I flatter myself some public benefit may be derived.

There may be said to be four different sorts or

methods of pruning now in practice; these I designate under the stiles or titles of—*first*, natural pruning; *second*, close pruning; *third*, snag pruning: and *fourth*, cutting in, or foreshortening. The three latter more immediately apply to hedge-row trees; but I will review the four; and in this review I wish fir trees to be understood as excepted.

I apprehend, that the desired object in pruning forest trees is—to increase the cubic measure of the bole or stem, and to prevent unnecessary injury being done by the extension of the side branches. Query: how is this to be accomplished?

The best of all pruning is what I call *natural*; this is effected in woods and plantings, where trees stand thick; there the tops of the trees unite; they draw one another up; light and air is excluded from the lower branches, and those consequently dwindle away; the stems of the trees grow up straight and tall; and they gather proportionate strength, from the top branches extending, when the planting is thinned out *gradually* (as all plantations of trees ought to be). This remark is also applicable to hedge-row trees, in their infant state, when they are drawn up, and nourished by the thorn bushes. But when trees stand singly, they throw out strong side branches, and their boles, or stems, seldom rise to much height, or attain to much cubic measure, unless the side branches are either cropped by cattle (which is a species of

pruning), or are cut off by the hand of man Hence arises the diversity of opinion with respect to the most proper method of obtaining the desired object, by the assistance of art, when nature ceases to operate in the manner wished for.

Close pruning answers to a certain extent. The operation is performed by cutting the side branches off close to the bole of the tree, when it is expected that the bark and the timber will heal over the wound, and become united. If this operation is completed when the branches are young, or mere saplings, the tree in a vigorous growing state, and a few only of the branches cut off *in one season*, the object will be obtained, without injuring the growth of the tree. But the system, from having been misunderstood, has been misapplied, and carried to an alarming extent, doing incalculable injury, not only to individuals, but to the country at large. Immense numbers of large boughs have been amputed from the trunks of trees, in the *vain hope* of the timber growing over the wounds, and uniting with the stumps of the boughs left in the body of the tree; the bark and sapwood does indeed sometimes grow over such wounds, but the stumps of the branches enclosed *go to decay*, become a canker in the bole of the tree, and the result is calamitous. It is the ready extension of the bark over the wounds in trees which has been the means of misleading so many people; because, as they see that the bark unites, they take it for

granted that the woody fibre does so also; and so, in fact, the growing part of the tree will do, but the stump of the amputed arm becomes a dead substance, and cannot unite with a live one. On the whole, it is a dangerous practice to cut large boughs close to the stems of trees, particularly old and unthrifty trees. Young thriving trees will succeed, if close pruned to a certain extent; but old, stunted, or full grown trees, *never*.

Snag pruning is a very pernicious practice; it is performed by cutting the boughs off several inches from the bole or stem of the tree; in old trees, those stumps act as conductors for wet into the body of the tree; in young trees, the bark of the stubs throw out young shoots, which flourish for a time, but the heart wood of those stumps decays, and has a similar effect to the stumps of boughs in old trees, which do not throw out young shoots. The abominable practice of snag pruning is very generally followed in the present system of hedge-row timber management; and hence that timber is rendered of comparatively little value.

The cutting or pruning of hedge-row timber is a tender point to touch upon, as regarding the connection between landlord and tenant. Every judicious tenant will allow, that it is his interest to encourage (to a certain extent) the growth of hedge-row timber upon his farm; because, he well knows, he is then more likely to have a plentiful

and convenient supply of timber for necessary repairs. His only fear is, that the growth of hedge-row trees may be extended to the injury of his crops. This we see to be frequently the case, while that very timber is an utter disgrace to the estate, and of comparative little value to the landlord. When a landlord's measures are regulated by such bad policy, is it probable that a tenant will encourage an extension of the growth of hedge-row timber upon his farm? Certainly not. He is no more likely to do so, than he is to increase the stock of rabbits upon his farm, if he is not permitted to kill them when he pleases, or, rather, when he has an opportunity of doing so. But to obviate all difficulties, and to reconcile the apparent jarring of interests between landlord and tenant on this head, I will venture to assert, that if the instructions which I purpose to give in the following section are strictly attended to, the interest of landlord and tenant will be united in encouraging the growth of hedge-row timber, and all cause of dispute on that subject will in future be done away.

Foreshortening, or *cutting in*, is an approved method of pruning, and is admirably adapted to training hedge-row trees *in the way they should go*, to benefit the landlord, without doing much injury to the tenant. This operation is performed by shortening the over luxuriant side branches, but not to cut them to a stump, as in snag prun-

ing; on the contrary, the top only of the branch should be cut off, and the amputation effected immediately above where an axillary (side shoot) springs from the branch on which the operation is to be performed: this may be at the distance of two, four, or any other number of feet from the stem of the tree; and suppose the axillary branch which is left (when the top of the branch is cut off) is also over luxuriant, or looks unsightly, it should also be shortened at its sub-axillary branch, in the same manner as before described.

It is a principal object in pruning, to encourage and support one leading or centre shoot *only* to a tree. But as it frequently happens that there are two or more top shoots nearly of a size, and seemingly contending for superiority, the most promising shoot should be reserved for a leader, and the others foreshortened, in the manner here before described.

By this simple method of pruning, the principal stream, or current of sap, is diverted into one channel, the centre branch of the tree, which increases in cubic measure, in proportion to the quantity of sap, or other nutriment which flows through it, in the flux and reflux from the roots to the leaves, and from the leaves to the roots.

The branches of trees pruned in this manner are always kept within due bounds; they do not extend over the adjoining land to the injury of the occupier, at least, not until the stem of the

tree rises to a height (out of the reach of pruning), when the top branches can do comparatively little injury to the land. By adopting this system of pruning, the bad effects of *close* and *snag* pruning will be avoided; the country will be ornamented; and the community at large, as well as individuals, benefited.

Little more need be said on the subject of training; I have before advised that all cankered young trees be cut off near to the ground when the hedge is cut the first time; but when young trees appear healthy at that time, they should be left stand, and be treated as I have before described under the head of Foreshortening: but let it be remembered, that this applies to the over luxuriant side branches only; for the small ones act as so many auxiliaries in maintaining the health of the tree, and they do no injury to the occupiers of the adjoining land.

CHAPTER III.

On Guarding Young Hedges.

I NOW proceed to take a view of some of the methods practised for guarding young hedges.

These differ, more or less, in most districts; but I believe the system of guarding by whins, (furze,

gorse, &c. &c.) is peculiar to some parts of Norfolk; at least, I have never seen it practised to any great extent elsewhere. As I do not approve of the practice, I will first describe it, and then assign my reasons for disapproving of it.

It is customary to sow the whin seed, or to set the plants in rows on thorn-hedge banks, sometimes above, sometimes below, and at other times both above and below, the rows of thorns. Opinions (even where the method is practised) are much at variance with respect to the propriety of the system. Its advocates assert, that whins nourish young quicksets, and encourage their growth: while the opponents of the measure insist, that whins stagnate the growth of thorns, by robbing their roots of nourishment. I cannot subscribe to either of those opinions, for I believe that whins neither do good nor harm to thorns, provided that they are not allowed to overtop the young quicksets: this is readily accounted for in the natural habits of the two plants. Whins producing papilionaceous flowers, and bearing *seed pods* (legumen), do not subsist entirely upon the same food as thorns bearing haws or stone fruit (drupa), consequently those plants will both thrive when growing in conjunction, if they have equal benefit of light, heat, air, and moisture, and the soil congenial to both. But allowing this opinion to be as correctly founded as I believe it to be, it is not a sufficient reason for continuing the slovenly

unhusband-like practice of growing those plants upon the same hedge-row bank.

If whins were grown, *in close rows*, by the sides of white-thorn hedges, they might (to a certain extent) be considered as guard fences: but that is very rarely the case: for I may venture to say, that ninety-nine times out of a hundred, there is only to be seen whin bushes growing here and there along the banks of hedge-rows. Goldsmith describes furze or whin fences properly: he calls them *straggling* and *unprofitable*, to which I will add, disgusting in appearance when misplaced, which they certainly must be on the borders of highly cultivated arable fields; and no farm, nor farming establishment, can be said to be perfectly regulated while any thing remains out of its place. But custom and habit reconcile us to all things, whether good or bad, right or wrong. This reflection has frequently occurred to me, when in company with some celebrated agriculturists in this district. I have observed these gentlemen viewing their highly cultivated and beautifully drilled fields with seeming delight, while, at the same time, they appeared to be totally insensible to the disgusting appearance of the huge, obsolete clay or marl pits, unoccupied or uncultivated, in the centres of those very fields; or of the unprofitable and untidy objects (the whins) which were scattered about the borders of the fields. The thought did not seem to strike them, that it was

not only possible, but proper, to remove those whins (if necessary they should be cultivated) from the hedge-rows, and to place them round the old marl or clay pits, where they would be at once useful and ornamental. This is a common remark by strangers who visit this country; and it is to be regretted that the occupiers cannot, or rather will not, see it in the same light. I have, however, great hopes that this stain upon the Norfolk husbandry will be wiped away, because, in all the conversations I have had on the subject, I have never yet heard one rational or well-founded argument advanced in support of the practice.—Sound reasoning will ultimately work its way, and overcome prejudice.

Arguments on this subject have sometimes closed in the following manner:—For elucidation, I call the whin-growing farmer, Mr. A. and the impertinent inquisitor, Mr. B.

Mr. A. having tried every other shift in defence of his favourite practice, and having been successfully combated by B. he brings forward the *Game* as a subterfuge or *dernier resort,* and the argument is resumed in nearly the following terms.

A.—" Sir, I must confess, that your arguments and reasoning against the practice of growing whins on hedge-row banks, though not convincing, do appear a little plausible; and I might, perhaps, be induced to follow your advice, but

our steward (who, by the by, is a very peremptory and arbitrary man) says, that I *must* leave my hedge-row banks undisturbed, for the protection of game; and surely you would not wish me to run the hazard of quarrelling with the steward, for there is no knowing what means he might take of misrepresenting me to my landlord, who, of all men upon earth, I am the most desirous of obliging: and I therefore think it will be most prudent for me to allow the whins to grow upon my hedge-rows, along with the other natural produce of the earth, as a protection for the game."

B.—"Sir, this is so much the way of the world, (always ready to shift the load from our own shoulders, &c. &c.) that I cannot *particularly* blame you; and I so far agree with you in opinion, that stewards are frequently very obnoxious characters; but I must say, I have never yet met with any of them such egregious fools as to believe that pheasants build their nests on the tops of thistles in *full blossom*, and on docks in *full seed;* or that partridges usually hatch their youug *in corn harvest*. The fact is, Mr. A. because you are requested to keep your hedge-rows undisturbed in the months of April, May, and June, you make that a pretext for preserving rubbish round your fields the whole year; hence, the seeds of thistles, docks, and other pernicious weeds (nurtured by the whins), are blown about in autumn, to the great annoyance of the public, and to your own certain

loss. And as to the whins, I think your landlord will not object to your substituting your old clay pits, and other waste places on your farm, as whin preserves for game, in lieu of your hedge-row covers, which are more properly preserves for rats and other vermin, the enemies of game, than for the game themselves."

Enough, and probably more than enough, having been here said upon whin-guard fences, I will now turn to a more effectual method. Guard fences, made of posts, with double or triple rails, have been recommended, Such fences are efficient, but rather too expensive in districts where rough timber is scarce. There is a simple, but very necessary appendage to a rail fence, which I think should never be omitted; it is what I call a middle brace. It consists of a piece of sawn timber, a part of a rail, or even a strong hedge stake, set upright, with one end *on*, or *in* the ground, and placed equidistant between two posts, and the rails nailed to the brace. The advantages derided from following this practice are obvious; but, as they may not strike persons, who have not experienced the benefits of them, I will here enumerate a few of those advantages.

Suppose the rails to be nine feet long (and without braces), they must either be made very strong, (consequently unnecessarily expensive), or they will be liable to be broken when any person sets foot upon them in getting over the fence; whereas,

when nailed to the middle braces, the bearings will be reduced from nine to four and a half feet. Heavy stock pressing against nine-feet rails (without braces) are apt to break them; but when the rails are nailed to braces, one rail cannot be readily broken, for the whole act for their mutual support, and must stand or fall together. Sheep are apt to rub against rails, and dislodge them from their hold in the mortise, but this cannot happen when the rails are nailed to middle braces. When braces are used, the mortises in the posts may be made sufficiently large to admit the ends of the rails to slip easy into them; air is then freely admitted into the mortises, and the ends of the rails are prevented from rotting prematurely. This desirable object cannot be obtained when braces are not used, because the ends of the rails must be driven tight into the mortise, which not unfrequently splits the post in the first instance, and if not split, the ends of the rails very soon become tender. Post and rail fences are most necessary to guard young fences on the sides of permanent pasture, grazed by heavy stock, and least necessary against arable land, where the pasture comes round in four, five, or six years only, according to the rotation of cropping. The county of Norfolk is very generally so circumstanced, and the usual method of guarding (independent of whins), is as follows. Suppose the land is cultivated upon the four-course shift, and

the fence made in autumn upon a clover layer, broken up and sown with wheat; a trench is opened along the top of the bank above the thorn-sets, into which is set a thick row of thorn bushes, or other bushwood tops; the earth is then banked up against the brushwood to keep it steady, and the top of the brush is cut off square, about two or three feet above the bank; this prevents the brush from being acted upon and deranged by high winds, and gives the whole a neat appearance. The dead fence prevents hares from tracing along the bank and eating the young quicksets; and, on bleak situations, it shelters and encourages the growth of the thorn. No other guarding *should be* required the first year, because clean farmers have no grass amongst their wheat stubbles, but in certain cases, such as adverse seasons, tenants changing occupations, &c. it is found advisable to turn sheep upon wheat stubbles; when that is the case, a row of hurdles is set on the ditch side of the bank to guard the young quick.

Turnips follow wheat in the rotation; when they are eat *upon the ground*, the young fence is guarded by hurdles on the ditch side, and the brushwood fence guards the opposite side.

Barley follows turnips, and no guarding is required, unless when the young grass plants are pastured: but this is a practice not to be recommended *generally*, although allowable in certain cases; such, for instance, arising from the first law o

nature (necessity), seasons, local situations, soil, &c. &c. &c. When the young clovers are pastured, the ditch side of the bank is guarded by hurdles. From this review it appears, that we arrive at the fourth year before any material precaution is required in guarding the young hedge; but in that year more attention is necessary. If the clover is grazed by neat cattle and horses, both sides of the fence are guarded by hurdles, set at a proper distance, to prevent stock from reaching the tops of the thorns; but if grazed by sheep, the ditch side *only* requires to be guarded by hurdles, and the brush fence on the top of the bank is lined or strengthened, by having more brush added to the former, and the bank new done up. By the time the second rotation is near at an end, or in the eighth year, the hedge (if properly managed) will have become a good fence of itself, unless it has been found necessary to cut it before that time. This operation will be treated of hereafter.

It may appear ridiculous that I should think it necessary to mention, that in the arrangement of fences, the gate-posts should be set in the line of the quicksets or *live fence*, and not in the line of the guard *or dead fence*. Yet, simple as this remark certainly is, it is a very necessary one, and applicable to various districts, not even excepting the county of Norfolk. No farmer, however expert, or celebrated he may be, in his practice of

the principal branches of husbandry, should ever consider it beneath his notice to look into the minutiæ of the operative part, for if he does, he is certain to have errors committed by those to whom he delegates the trust, and who, if not less capable of judging, are certainly less interested in the ulterior object. Hence, we frequently see a carpenter, or other workman, put down the gate-posts in line with the guard fence (and not with the live fence, as it ought to be,) because it makes *the job* look well; and as the farmer takes only a cursory view of *the job*, he seconds the workman's opinion, that it is well done. But, when the hedge becomes a sufficient fence of itself, and the guard is removed, the error which has been committed, in misplacing the gate-posts, is then discovered; and, as it would be attended with some trouble and expense to remove them into their proper places, they are generally left to remain in the situations where they were originally put by the workman, to make *his job* look well; and consequently, a gap is left between each post and the hedge. These are sometimes stopped by brushwood, by old hurdles, or by pieces of rails; but they are also not unfrequently left unstopped, which is convenient enough when the gate is shut, as they serve as creep-holes to the sheep, and save the shepherd the trouble of opening and shutting the gate. It is true, those harmless and useful animals (the sheep) leave a portion of their fleeces

on the sides of the creep-holes; and they also occasionally meet with a few bruises when running the gauntlet, particularly when their keeper is assisted by his faithful companion.

There are various other methods practised for guarding young hedges; but these I shall avoid mentioning, the foregoing having been sufficient for giving me an opportunity of pointing out some practices which I consider to be erroneous.

CHAPTER IV.

On Cutting Hedges.

BEFORE I commence my remarks on the system and mode of cutting hedges, I will describe the edge tools which I have found most proper for performing the operation.

The Bill-hook.

THERE are so many varieties of bill-hooks in use, that it may be said, almost every district in the kingdom has a hook peculiar to itself; and every workman (from being accustomed to the use of his own hook) believes it to be the summit of perfection, in shape, make, and efficacy; while, in reality, it may not only be an imperfect, but a very improper implement, for performing the operation

for which it is intended. It is true, that a skilful and persevering workman will contrive to execute an arduous task with tools very ill adapted to the purpose: but the same person would probably have completed the task in half the given time, in a more perfect manner, and with greater ease to himself, had he been provided with tools proper for the job he had undertaken.

Among the endless variety of bill-hooks in use, some approach to perfection, while others are quite the reverse. I cannot instance a greater contrast than exists between the Norfolk bill-hook and that in use in Oxfordshire. The efficacy of those two hooks is so essentially different, that, with the former, it is nearly impossible to *cut up*, when a stub is to be taken off near the ground; while with the latter (in a similar case) it is equally impossible to *cut down*, without danger of spoiling the hook. The Norfolk hook is, in fact, only fit for an old woman to chop sticks with; but the Oxfordshire hook is a proper tool for an expert woodman to handle, and I therefore strongly recommend that admirable implement for general use. These hooks are used, with great effect, in cutting the underwood in Minster woods, near Witney, Oxen, from whence they may be obtained, of proper size, shape, and temper; they may also be had at almost any country blacksmith's in the county of Oxford. I mention Witney, because I know they are made perfect in that neighbourhood.

Hatchet.

THIS is a useful and very efficacious tool; it is nearly uniform in shape every where, and only varies in size and weight, according to the nature of the work for which it is intended. Every hedge-cutter should be provided with a handy, light, well-tempered hatchet.

The Scimitar.

THIS is an implement not in general use; it is adapted for brushing up the sides of hedges (an operation much preferable to clipping): the blade in some degree resembles that of the weapon from which it takes its name, with this essential difference; the inner or concave side of the hedge scimitar is made sharp for cutting, (and not the convex, as in the warlike weapon). The blade of this implement (which should be well tempered) is about twenty inches in length, and one and a half or two inches broad; it is bent a little to one side at the shoulder, where it is attached to the handle; this is for the convenience of the workman, and is made to incline either to the right or left side, in conformity with the hand he usually works with, and is called right or left handed, accordingly. The handle is made of tough ash, light, and about four feet in length. This is an admirable implement in the hands of an expert workman; and where it is properly used, the

hedges are kept in the neatest possible order, at a comparatively trifling expense.

Hedge-cutting.

THERE is a general rule which should be *particularly* attended to in performing the operation of cutting white-thorn hedges, or indeed in cutting almost every bush or tree, and never should be departed from but upon particular occasions. This grand or golden rule is comprised in two short words of one syllable—*Cut up.* I mark this expression strongly, because I consider the practice to which it alludes of great importance; and I well know that many intelligent men who have never given the matter a thought, do not (even at the present day) know that there is any difference in the effect between *cutting up* and *cutting down.* A moment's reflection will show, that it is impossible for an edge tool to pass through a piece of timber, without causing a severe pressure against one or both sides of the wood, because the tool occupies *space.* The teeth of a saw drag the chips out of the cut, and give the *space* requisite for the tool to pass; but an edge tool can only pass by pressure.

Suppose a piece of timber to be laid horizontally, and a heavy edge tool to be let fall perpendicularly upon the middle of it, the pressure will be equal on both sides: this is the effect caused by shears,

in clipping hedges; the ends of the stub, and the shoot or branch cut off, are alike injured.

Again; suppose the piece of timber to be laid upon a slope or inclined plane; the pressure from the blow of the axe will be proportionably greater upon the lower than upon the upper end of the piece of wood, according to the incline of the plane on which the timber is laid. And in cutting the stem of a bush or young tree which is growing upright, if the blow is *struck down*, nearly the whole pressure falls on the *stub*, which is thereby shattered to pieces, while the *stem* cut off is left sound; but when the blow is *struck up*, (as it always should be), the effect is reversed; the *stub* is then left sound and smooth, and the *stem* cut off is shattered.

When trees or bushes are *cut down*, and the stubs left shattered, (as they inevitably must be when so treated), the wet descends through the clefts of the stub into the stool or crown of the roots; it there generates canker, and produces premature decay in the plant. The young shoots which spring from such stubs may be numerous, but they will be puny and feeble, scarce able to support their own weight and the first high wind, or heavy fall of snow, will break them down. This is frequently the case when a hedge is cut in this manner; the snow bears the whole mass of young shoots into the ditch, when, if not entirely spoiled, they are very much injured, and the only

remedy is to cut the whole to the stub a second time. Even under this calamity, it is but seldom the farmer attributes his misfortune to the right cause: he attaches the whole blame to the elements, never dreaming that he himself is in the least culpable from inattention. When hedges are *cut up*, the *stub* is left sound and smooth, the wet does not penetrate through the stub into the crown of the roots, canker is not encouraged, and the young shoots grow up strong and healthy, and able to contend against the vicissitudes of weather. However plausible this reasoning may be, I do not expect it will make so much impression as could be wished, because of the extreme difficulty in contending *successfully* against deep-rooted prejudice. As an instance of this, I beg leave to relate the following short anecdote. A few years ago, being in company with a neighbour (a very honest worthy man, but *not a little* prejudiced in favour of his own practice as a farmer), our conversation turned upon the principle of cutting hedges. My arguments made but little impression upon my neighbour's mind; but he at last consented (as a matter of favour) that a part of a hedge, then under the operation of cutting, upon his farm, should be *cut up* in the manner I recommended, and that the other part should be *cut down* in the usual way. In the latter part of the following summer, I happened to call upon my neighbour: he immediately introduced the hedge-

cutting story, and, with great exultation, informed me, that he could now *prove, to a certainty,* that it was all nonsense I had so long been talking about *cutting up,* for (continued he) your part of the hedge does not grow a bit better than mine, nor, indeed, do I think it grows quite so well. This assertion (taking into consideration from whence it came) did not in the least surprise me. I proposed that we should go and take a view of the hedge: this was agreed to, and away we went, my friend all the way priding himself on his prudence in adhering to old practices, and exulting over my supposed defeat. On the first view of the hedge it certainly appeared in the state as described by my friend, with this variation,—there was no apparent difference in the growth from end to end the whole had made miserably weak shoots. I then got into the ditch, and minutely examining the stubs, soon discovered the cloven foot. I requested my friend to show me one stub that had been *cut up.* He examined again and again, but not one could he find. He was struck with astonishment, and, (according to the country phrase), stared like a stuck pig. He could scarcely believe the evidence of his own eyes. He said, he could in no way account for this extraordinary circumstance, otherwise than that some malicious person must have mangled the stubs after the hedge was cut. He was *quite sure* that a part had been *cut up,* for that he had given *John* positive

orders to do so; and John, who had worked twenty years upon the farm, was known to be one of the best hedge-cutters in the country. He had such full confidence in John, that he had not thought it necessary to look after him. John was then called up, and questioned upon the subject. He said, it was very true that he had received such orders from master, and it was his intention to have obeyed; but finding that his bill-hook was not fit for *cutting up*, and as *he knew* that it was a nonsensical piece of business altogether, he thought it was best to finish the hedge in the old way, as he never expected to hear any more about the matter; and as he had been a hedge-cutter ever since he was able to work, he was *quite sure* that no person could inform him better than he knew about the business.

It is not necessary to mention the sequel. My object in narrating this anecdote is, to show the absurdity of a farmer undertaking an experiment, and entrusting the executive part thereof to a labourer, from whose report he makes his mind up on the subject. Every farmer who is desirous of giving an experiment a fair trial, should either perform the operative part himself, or *see* that it is done correctly. He should never decide upon practical subjects from the reports of others.

CHAPTER V.

Cutting of Hedges continued.

AMONGST the various methods of cutting hedges, there is one of a very barbarous nature, called (in Norfolk) *Buck-stalling*. The operation is performed by *cutting down* the tops of bushes to about two feet from the stubs, then slashing and shattering the stems to pieces, until they, in some degree, resemble the horns or head of an aged buck, from which resemblance I apprehend this ruinous custom derives its name.

This practice is of great antiquity, probably coeval with the forest laws of William the Conqueror, and his immediate successors: I am induced to think so, from remarking the fine browse for deer produced from buck-stalled bushes. There are still to be found some modern Goths who practise buck-stalling, but these are men who have either not given the subject a thought, or are blinded by prejudice. The chop stick bill hook of Norfolk is admirably adapted for slashing and buck-stalling, and I am sorry to say it is but too often used for that purpose.

It appears that most landlords in this county are aware of the impropriety of buck-stalling; for it is customary to insert a clause in the covenants of leases, to the effect that "the tenant *shall*

not buck-stall, or cause to be buck-stalled, any of the hedges upon the demised farm;" yet such is the force of prejudice in favour of established customs, that, notwithstanding the express prohibition, the practice is still continued, and that, in some instances, in the face of some of the very best and most liberal landlords in the kingdom even at the hazard of offending those landlords, and in direct violation of the covenants of the tenants' leases.

Cutting and scouring is commendable (at least when compared with buck-stalling), and is a common practice in Norfolk: the term implies cutting the hedge, and scouring the ditch. This operation is performed periodically, in eight, ten, twelve, or more years, according to the growth of the hedge, and course of cultivation on the adjoining lands. In this practice the bushes are all cut off a few inches from the face of the bank; and are generally *cut up;* because the hatchet is used in place of the bill-hook, owing to the stems being too strong for the latter implement to operate upon them with effect. After the bushes are cut off, the ditch is scoured out, and the bank faced up.

There is one objection to this method of cutting which I will here notice. The whole of the stems (whether weak or strong) are cut indiscriminately to the same level; and the consequence is, that the strong stubs pushing out proportionably strong

shoots, overtop and overpower their weak neighbours, and cause them to dwindle and die; hence originate the gaps or vacancies which are generally seen in hedges so treated. I flatter myself that I shall, in the end, point out a method much preferable to that of cutting and scouring; but as I by no means consider this a despisable practice, I will here point out a few practical hints relating thereto, which may be of service to those, who, either through preference, or in conformity with the covenants of their engagements, are disposed to adhere to the system.

When old hedges are cut in this manner, a small portion of the shoot from the preceding cutting should be left on the stubs (the young wood is denoted by the smooth bark on the stem); the shoots from the buds of the young wood are invariably much stronger than those from the buds of the old, or rough barked wood: but it not unfrequently happens that the buds in the rough bark become effete; consequently, when a stub of this description is cut below the young wood, it must die, by reason of the want of generative power; and the only chance of the plant surviving is, from throwing up shoots from the roots; this is sometimes the case, but it more frequently happens that the plant dies, and leaves a gap in the hedge. An inch, or even half an inch, of the smooth barked young wood, is sufficient to be left on the stub. From what has here been said, it is obvious that hedges

managed upon the cutting and scouring principle, are liable to have gaps, and still more so upon poor than upon rich land. The inconvenience arising from those gaps may be remedied, in a great measure, by proper attention in cutting, even upon the cutting and scouring principle.

In cases where there are wide intervals from stub to stub, the whole of the bushes should not be cut off close to the stubs; a sufficient quantity of the healthiest stems should be left on the stubs for the purpose of being laid along the bank, one or two in each interval. These stems should be stripped (or nearly so) of their branches, and notched at the bottom (in the way which every hedger knows) to form a pleach: these pleaches should be laid in the intervals along the line of the stubs, and again notched, by having a piece of wood *cut clean out by two strokes of the bill-hook* or *hatchet*, and the depth of the wound better than half through the stem: these notches should be made at the places from whence young shoots are required, for the stems will assuredly throw out young shoots from the places where they have been wounded. These stems should also be pegged down close to the bank, and have some earth banked up to them; for upon good soils, and in favourable seasons, they will not unfrequently strike root from the stems, and form new stubs, which would effectually fill up the vacancies. Transplanted crab trees of three or four years

growth, removed into the gaps of old hedges, generally succeed, but their heads should not be cut off at the time of planting, because, if cut, the shoots from the thorn stubs would soon overtop and overpower them.

I am not so sanguine as to suppose that all old hedges, upon every soil, and in every situation, can be restored; but I do believe that, with very trifling attention, a great many may be. The agriculture and rural management in Normandy, and in other provinces in France, have been censured, because there are no hedges. I think this is unjust; the French do not *pretend* to have hedges. Let us look at home; view the hedges by the road sides in Cambridgeshire, and in many other parts of the kingdom; you see here and there a bush, it is true, just sufficient to mark the line of the road, or, perhaps, to prove the instinct, and try the honesty of the sheep and other stock passing to the London market; for, as to fences, that is totally out of the question; yet, these are our boasted hedges, these are the beauty and ornament of the country, about which we crow, and exult over the French: we see the speck in our neighbour's eye, but cannot, or will not, see the beam in our own. Who are most deserving of ridicule? Those who make *no pretence;* or those who *do pretend, and fail?* I expect this remark, added to many others of a similar nature, will produce a retort courteous, and I shall be told, I

pretend to write, but that I had much better let it alone: this would be one proof of the blister taking effect; although I do believe the remark would be correct.

But, to return from this digression to the practical hints:—I have frequently observed a gross error in the practice of banking up new as well as old hedges; that is, in the method of placing turf (sward, flag, or by whatever other name it is called in different districts). My opinion is, that the turf should be banked up *with the grass side out*, when it will naturally take root, grow, and assist in keeping the bank up. When turf is cut in squares, and placed one upon another, *with the grass sides down*, for the purpose of raising a bank, in the manner that canal bankers call *ramping*, a very small part of the grass only can grow from the joints of the turf; the remainder dies, the turf rots, settles, and down slips the bank. Plenty of instances of this kind are to be seen along the Uxbridge road leading from Hyde Park Corner, as well as along the sides of most of the roads leading to the metropolis. It is so far laudable in the citizens to follow this practice—they give additional employment to a part of our superabundant population, and thereby render emigration to the Cape of Good Hope (to a small extent) less necessary.

Cutting and laying is not much practised in Norfolk, nor is it so necessary in a district purely

arable, where the hedges are composed of white-thorns. Where the system is followed, attention should be paid to throwing the pleaches *from the line of stubs*, and to use dead stakes in preference to live ones; especially in districts where hedge picking is not common. When stakes of willow, elder, or other sorts of wood liable to strike root, are used, the bark should be stripped clean off before the stakes are put down: this will prevent their growing. The same attention to the *method* of cutting is requisite in this system, as in that of cutting and scouring. To form a proper pleach, the bark, with a small part of the wood, must be *cut or slipped down* one side of the stub, but the remainder of the stem should be *cut clean up*. When there are gaps in the hedge, the vacancies may be filled in the manner directed under the head of cutting and scouring. When old hedges, having wide gaps, are to be cut and laid, the line of stakes must of necessity be in the same row as the stubs. When *perfect* hedges are cut and laid, and the pleaches thrown from the stubs, (as they always should be in a good hedge), the stubs will be left clear, and will push up abundance of strong shoots; these are frequently cropped by sheep and game, and thereby sustain material injury. It is a desirable object to prevent this, and it may be attained in a simple and easy manner. After the hedge is cut, and bank cleaned, take the tops of the thorns, or any other rigid

brushwood, place them along the row of stubs with their ends hanging down the bank, and peg them fast down, so as to prevent their being dislodged by the wind. The dead thorns will admit sufficient air to encourage the growth from the stubs. No hares or rabbits will go among dead thorns; and if a sufficient quantity of brush is placed on the bank, and in the ditch, sheep will also be effectually fenced off.

There are various other methods practised in hedge cutting, which I do not consider necessary to be mentioned at present. In the following chapter I will explain the method which I think the most adviseable.

CHAPTER VI.

Cutting of Hedges continued.

IN describing the operative part of my favourite system of hedge cutting, I will commence with a white-thorn hedge in its infancy, and will suppose the workman to be provided with tools of the description I have recommended in a former chapter. These are—the Oxfordshire bill-hook, a light hatchet, and a hedge scimitar.

Some eminent practical men have advised, that *all* young thorn hedges should be cut close to the

ground in the second year after planting. From this sweeping principle I beg to dissent, because I see no just reason for cutting a young hedge when in a vigorous growing state. A hedge can do no better than well. There is an old adage which says, "*Let well alone.*" I think it applies to this case, and is worthy of attention. But when young hedges are mildewed, mossed, cankered, or otherwise stunted and unthrifty, they should be cut off to the ground, whether at two or more years' growth; and, when the operation is performed, attention should be paid to the rule I have so often mentioned—*Cut up.* Thriving young hedges require no other cutting than having a few of their over-luxuriant and wide-spreading side branches brushed off by the bill-hook or scimitar.

The most approved form of a cultivated white-thorn hedge, is locally termed *Hog-maned,* that is, narrow at the top, and wide at the bottom; something resembling the body of an old Norfolk cow. The advantages of this shape in a hedge are so obvious, that I consider it unnecessary to point them out here. The form of the hedge should be determined upon in the first instance; and every subsequent cut of the bill-hook or scimitar, should tend to encourage the growth of the hedge in the desired form.

It is quite mortifying to see fine healthy young thorn hedges so mutilated as they sometimes are

in this county, principally by shepherds, and such other inexperienced persons. These men are desired by their masters to stop the gaps in such and such hedges, and to repair the brush guard of such other fences. They then arm and accoutre themselves with their chop-stick, bill-hook, and hedging gloves, and, acting under the privilege of roving commissions granted by their masters, they fall foul of the most convenient good hedges. They commence their work of devastation, by slashing and chopping off all the lower branches; and, in doing so, they are certain to *cut down*, leaving the stem shattered to pieces, and the hedge in form quite the reverse of what it should be, and not unlike the old Norfolk cow turned heels uppermost. In this state the mangled hedges remain, until some of their members go to decay, when the sheep force passages through them: and as these thoroughfares give the shepherds some additional trouble, they commence their attacks upon some other thriving hedges, for the purpose of obtaining thorns to stop the gaps of those they had previously ruined.

As a single forest tree (perfect in all its parts) may be compared to a well-regulated mixed government: the bole or stem representing the monarch; larger branches, the nobility; smaller branches, the gentry of different degrees; leaves, the people; and the roots, the laws on which the whole fabric rests; so may a well-regulated

hedge-row be compared to a republic, but that of a description which never has existed, nor ever will exist, in a political sense, otherwise than in theory:—I mean, *perfect* equality. The Almighty Disposer of events seems to have ordained, that there shall not be a perfect equality in this world; and even in the vegetable kingdom, one law of nature—*gradation*, prevails. For instance, when a hedge row is left without control, we soon see one plant outgrow and overtop its neighbour of the same species, and apparently enjoying the same advantages of cultivation. It is with a view to counteract this disposition of natural order, that I mean to give some practical hints, for the purpose of explaining the theory of a new species of republican government, founded on the principle of equality, *without liberty*; equality in the efficacy of the members of the community, or hedge-row, and without one member having the liberty or means of annoying its neighbour. Having thus described the proper shape and character of a *reformed hedge-row*, I will now point out the means of carrying this *levelling system* into effect.

I will suppose a thriving hedge to be twelve or fifteen years old before it requires to be cut the first time; the stems will then have attained to very different degrees of growth; some, perhaps, not more than half an inch in diameter, while others may be three or four inches. Should they

all be cut off at the same level, (as is customary), the stronger stems will push out proportionally stronger shoots, and these will soon overtop and smother their weaker neighbours. It is with a view to avert this calamity, that I recommend the following system. *Let the stems be cut off at irregular heights;* the strongest close to the ground; the smallest at the full height, (say three feet); and the intermediate sized cut in proportion to their strength. By this means the weaker stems will have a decided advantage over the stronger, in their subsequent growth, and the hedge will be regularly filled with young shoots from bottom to top. But it is evident, this rule can only be strictly followed when the hedge is composed of various sized stems; and as that is not always the case, for it frequently happens that several stems of nearly the same size grow immediately adjoining to each other, it is then advisable to cut those stems off at unequal heights in the first instance, and afterwards reduce them to a par in growth, by the process called *notching*. This operation is performed by two strokes of the bill-hook or hatchet, the first *up* and the second *down*, so as to cut a piece of wood clean out of the stem. The depth of the wound should be regulated by the strength of the stem. The largest should be cut three parts through; the middle sized half way through; and so on in proportion. The

notching answers a double purpose; it prevents the strong stems from throwing out over luxuriant shoots from their tops, while it procures a full supply of young shoots from the bottom; for wherever the notches are made, the stems will push out young shoots. Hence, where it is necessary to leave strong shoots to the full height, it is advisable to *notch* them in two places; the first and deepest near the bottom, and the second (a smaller incision) near the middle. The notching system should also be particularly attended to in the process of cutting and laying hedges: the *wounded stakes* not only answer the purpose heretofore described, but they are also preferable to *entire stakes*, because they are not likely to tempt the profligate to cut them out for swingles to flails, faggot stakes, shillelaghs, &c. &c. &c.

Hedges cut in the manner I have recommended, push up young shoots of nearly equal strength, and in an entire mass, from bottom to top: they will also give the form required, (wide at bottom and narrow at top). The extreme points of the young shoots near the top of the hedge should be brushed off by the scimitar, in the winter subsequent to cutting. The ultimate height of the hedge must be regulated by circumstances: but whatever the height may be, it should not be allowed to advance more than eight or ten inches in one year: the proper proportion of the *hog-mane*

may then be maintained, and in a few years it becomes an impenetrable fence against all descriptions of stock. Such fences are kept in good repair, and in neat order, at a comparatively trifling expense; and after the two or three first years from cutting, the scimitar will not require to be used more than once in two years. Winter is the proper time for brushing up such fences: thorns cropped or clipped in summer, are apt to canker. Hedges should not be brushed or clipped in their infancy, (unless where growing upon very superior land), as side shoots are necessary for drawing nourishment to the plants, and thereby strengthening the stems. Hedges arrived at maturity, and cut in the manner here recommended, are most proper for the application of the scimitar.

Highly as I approve of the practice of brushing hedges in the manner heretofore described, I do not recommend the system under all circumstances: indeed, there are cogent reasons why it should not be adopted universally. It is most applicable for garden fences; the divisions of arable fields; fences by the sides of highways, &c. &c. This remark is meant to apply to the *trimming* of hedges only; for as to the system of *cutting*, I think it applicable, in most cases, where hedges are perfect: and where they are not, the deficiencies may be supplied by following the rules I have laid down in this treatise.

I will now take my leave; and although I flatter myself some of the practical hints may be considered worthy of notice, yet I own it is not to be expected that my uncourteous remarks will be favourably received in quarters where these little tickling blisters are meant to apply. I entertain a hope, however, that liberal-minded men will give me credit for impartiality and good intention.

THE END.

HOWLETT and BRIMMER, Printers, 10, Frith Street, Soho.

Holkham, Feb. 10, 1830.

My Lord Duke,

In answer to your Grace's letter with which I have been honoured, I beg leave to say, the system of pruning forest trees now in practice at this place, and to which my Lord Tavistock alludes, we have termed foreshortening, as descriptive of the practice of cutting in, or shortening, over-luxuriant side shoots, or branches; the amputation taking place before the axillary of a lateral shoot springing from the main branch. This system of pruning is particularly applicable to deciduous forest trees standing in hedge-rows, or in other open situations, where the side branches have room to expand.

The practice of pruning timber trees by artificial means has been carried too far, and much injury has been sustained from that operation having been performed injudiciously. Natural pruning is preferable to artificial. It is effected on forest trees growing in clumps, or masses, when the golden rules in planting are strictly attended to. These are—prepare the ground properly, fence well, plant thick, keep clean, and thin with good judgment.

More plantations of forest trees have been injured, I may say ruined, from improper thinning, than from all other errors in management. The thinning process is seldom commenced soon enough, and too many trees

are generally removed at one operation. Where fir trees are planted as nurses to deciduous forest trees, they should be first removed; but gradually, year by year, and the thinning of the deciduous trees follow in succession. The latter should be *cut up*, and close from the ground; that is, the stroke of the implement with which the operation is performed should be directed upwards; the stub will then be left perfectly sound. When the cut is made downwards, the stub is shattered, and the plant greatly injured. Stubs or stoles of young forest trees properly cut off throw up abundance of vigorous shoots; those may either be trained for underwood and game preserves, or selections be made from them to supply deficiencies in the trees marked to stand to a more mature age, which occasionally fail from causes not readily accounted for. It is therefore desirable to have a good supply of substitutes, which can be removed at pleasure, if not wanted for crop trees. A forest wood is most profitable, and most ornamental, when it contains a full stock of timber trees of different ages and different growths. Trees selected to stand for a crop in a wood so constituted, are not only drawn up to proper heights before they form their crowns, but their stems or boles acquire proportionate girths. Such trees seldom throw out over-luxuriant side branches; the sap flows in the most profitable channels, the boles, and those increase in size proportionally. The superior branches diverge from the crown, or top of the main stem; these gradually expand and overtop the smaller branches which

spring from the body of the stem; and the latter, from being so overtopped and overshadowed, dwindle, die away, and drop off. Hence the term, Natural Pruning.

Pontey, myself, and others, who have written on forest tree pruning, have been very generally misunderstood, and the instructions given for close pruning deciduous forest trees, intended to be practised upon young trees only, have been extended to trees of all ages, and great injury has been done in consequence.

When over-luxuriant side branches are cut off close from the stems of healthy young sapling trees, the wounds are soon healed over, and the stems are not injured, because sap, or sap wood, unites with other sap. But when large branches are pruned close from the stems of large trees, or other trees that have nearly done growing, although the bark may, and frequently does, heal over the wounds, the stems will not be perfect, because sap, or bark wood, does not unite with heart wood.

I have a striking proof of the accuracy of this assertion, in a piece of beech timber now before me, the history of which is as follows:—

Some years ago, Mr. Coke ordered some large beech trees to be felled at this place, for water-works repairs and other estate purposes. These trees had very fine, tall, clean boles, without a branch, stump, or even appearance of scar upon them. Traditionary report stated those trees to have been close pruned by Mr. Coke's ancestor, the Earl of Leicester, about eighty years ago. I was desirous of witnessing the result of that operation,

and made it a point to attend at the carpenter's yard at every favourable opportunity while the trees were under the sawyer's hands. The timber proved defective, the traditionary report quite correct. The trees had been close pruned, and the operation had been performed by a saw. The stumps of the amputated branches were quite black, not absolutely rotten, but without fibre or texture, and had something of the appearance of charcoal. Every stroke or cut of the saw was visible on the face of the stumps, and a corresponding indentation on the young wood which had grown over the wounds. In every case which I examined, and I minutely inspected a great many, the results were the same. But in no one case did I observe the least indication or disposition to adhesion between the new wood and the old. The timber was otherwise sound, and defective only where the large side branches had been close pruned. The planks cut from the timber were of comparatively little value, and but few of them could be used for the intended purpose.

Artificial pruning is frequently required among hedge-row trees, and other timber trees standing thin, or ringly, not being park or ornamental trees. Trees so situated seldom attain any considerable length of bole, if nature is not assisted by art. Hedge-row trees are seldom thought of being pruned, otherwise than by wood-stealers, before the occupier finds his crops injured, and that he is also inconvenienced in his husbandry occupations by over-luxuriant side branches growing from those trees.

When the pruning is at last begun, it is too generally a work of destruction; for the branches are mangled and lopped from the stems indiscriminately, and without any regard whatever to ulterior consequences.

The foreshortening principle of pruning is peculiarly applicable to hedge-row trees, and also to trees standing thin in woods. In the latter case, the advantage is two-fold; for the boles of the tree are not only increased in size, and improved in value, but the growth of the saplings and underwood is encouraged by the large side branches of the trees being cut in, and those desirable objects are attained without disfiguring the trees in appearance, injuring their health, or deteriorating the value of the timber.

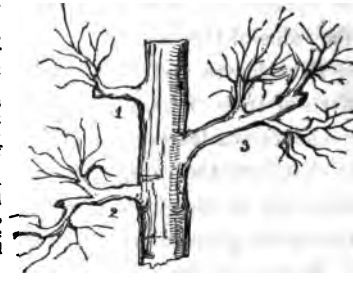
That leaves and branches are necessary component parts of trees, I admit. But I object to the theory of branches and leaves collecting the entire food of plants. If that were the case, trees would thrive as well upon bad land as upon good; neither would it be necessary to suit the plant to the nature of the soil.

No tree can be in a thriving, I will say in a natural state, without a due proportion of branches; and the principal object in pruning should be to assist nature in inducing the branches to grow in such proportions, and in such situations and forms, as are most conducive to the health and appearance of the tree, whether looking prospectively to profit or ornament.

I have before shewn that close pruning large branches from the stems of old trees is improper. Stump, or snag pruning is equally objectionable; that is the

practice of cutting off branches at a distance from the bole of the tree, and below the axillary of the first lateral shoot springing from the branch so cut off. I think the foreshortening principle much preferable to either of those methods, and the more so, from its effect approximating to that of natural pruning, as before described.

I will now endeavour to describe the process, or method of performing the operation of foreshortening over-luxuriant side branches of deciduous forest trees, as practised at this place, and to point out the beneficial effects resulting from that practice.



The sketch No. 1, is intended to represent a small luxuriant side branch, marked to be shortened at the axillary of the first live lateral shoot springing from the side branch.

The sketch No. 2, represents a larger and more luxuriant side branch, marked to be shortened at the axillary of the second lateral branch.

The sketch No. 3, is intended to represent a still larger and more luxuriant side branch, marked to be shortened at the axillary of the third lateral branch.

The gradations of the notches are not perhaps correctly maintained, yet, I trust, they will sufficiently explain the practice of foreshortening.

An over-luxuriant side branch being shortened as here described, the current of sap flowing in that direction is checked; and the surplus quantity being no longer required for the support of the part of the branch cut off, it flows into a more profitable channel, and the bole above the shortened branch will increase in girth in proportion

to the additional quantity of sap which passes through it. One or more live lateral branches, being left upon the stump of the shortened branch, draw sap in that direction sufficient for their own support; and that sap, passing through the stump of the shortened branch, prevents its premature decay. In process of time, the lateral branches growing on the stump, and all other small branches growing immediately from the stem or bole of the tree, dwindle, and begin to decay, owing to the main current of sap flowing through the bole, and diverging into the superior branches formed at the crown of the tree. These crown branches, consequently, increasing in size and vigour of growth, overwhelm all the lower branches, which gradually decay, and are ultimately grown out and pinched off by the bark and fibre of the bole, which enlarges in girth in proportion to the vigorous growth of the crown branches; so that the result of the foreshortening system of pruning is, to a certain extent, similar to that of natural pruning, as heretofore described.

It has been asserted, that the reason of boles of trees being larger below luxuriant side branches than above them, is owing to those branches, and their leaves, collecting food or nutriment, and conducting it to the boles. That may be the case in some degree; but, I believe, the principal nourishment of trees arises from the ground, ascends their boles, and diverges into their branches. Be that as it may, I am justified by experience in asserting, that the boles of trees above side branches increase in girth in proportion as those branches are kept

within due bounds, and that the more vigorous t crown branches grow, the larger and cleaner will be t boles.

Young timber trees, in a thriving state, generally ha taper-formed stems, and that form is encouraged by si branches. The foreshortening principle is, therefore, some cases, preferable to that of close pruning, even among young trees. I think there can be no doubt on the subject in regard to old trees.

I have now to apologize to your Grace, for troubling you with this desultory detail. I am aware many of the remarks I have here made are not new to your Grace; but I have found it necessary to repeat them, as I unfortunately have not the tact of explaining myself on practical subjects otherwise than by using a redundancy of words, and those sometimes not correctly applied.

I have the honour to be, my Lord Duke,

Your Grace's very humble and obedient servant,

FRANCIS BLAIKIE.

His Grace the Duke of Bedford.